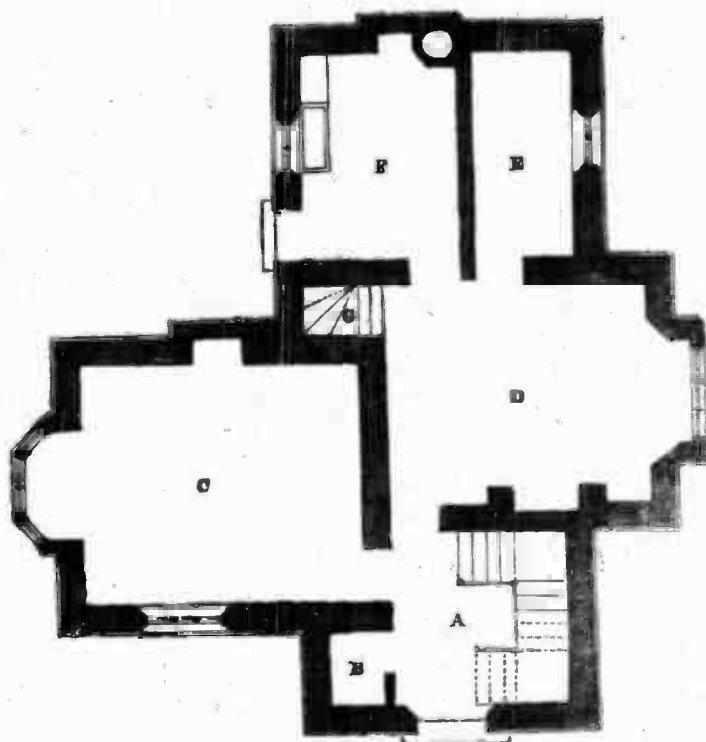


Chamber Plan.



Ground Plan.

### THE SMOKE NUISANCE.

THE report of the select committee has appeared. It is not by any means a clever document, and will keep, as the phrase goes, until a summary of the evidence shall have been laid before the reader.

*The Mining Journal* of Saturday proceeds with the evidence of Mr. Direks, who

Explained how the supply of air required for the combustion of the gases evolved in the furnace, if admitted by a separate orifice, to a certain extent regulated itself, in the same manner as the supply of air to the centre of the argand gas-burner regulates itself, whether more or less gas be allowed to pass through the numerous small orifices for combustion. The object being to catch the gases while at their high temperature, experience has shewn that the best place for the admission of the air is behind the bridge. Q. Do you think there is a

great difference between the argand plan and the other plans which have been recommended? A. There is a great difference, so far as relates to the plans which admit air, but do not admit it in a divided form.—Q. Admitting the air in jets? A. Yes; it is merely the principle upon which we burn gas. When we burn gas, we admit it in jets to the air; in the furnace the gas is in a body. We ought, as far as theory goes, to divide the gas into jets in the furnace, but it is a chemical fact, that, although you reverse the principle, and bring the air into jets, the action is the same.—Q. It comes to the same thing, then, whether you put a jet of air upon the gas, or a jet of gas upon the air? A. Yes; a jet of air in an atmosphere of coal gas gives a flame precisely in the same manner as a jet of gas into the atmosphere.—Q. Dr. Ure has stated that it makes no difference whether you admit hot or cold air? A. On chemical principles it makes no difference. It is better to admit the air at the atmospheric temperature, for the simple reason that

it then contains the largest measure of oxygen. The coal gas requires a certain measure of air; if you expand that measure by heating it, you cannot get the same quantity in the same space.—Q. You are aware that a jet of hot air upon a fire vivifies the flame? A. The conditions are different; you there apply the hot air to the solid fuel—here we are speaking of gaseous combustion.—Q. If this jet of hot air has such an effect upon the combustion, why should it not upon the gas, which emanates from the combustion? A. That is a very important question, in reference to the application of hot air to a furnace. By heating the air, you increase its bulk, and every cubic foot of air will thus have less oxygen in it, as a matter of course—the consequence is, that to introduce the same weight of air, when in a heated state, you ought to apply the blast, but if you admit it only by atmospheric pressure, you will not have the same quantity of oxygen. With respect to the objections raised by manufacturers, the witness observed, that so many plans have been before the public during the last twenty years, that there is a general impression that they are all failures, and as manufacturers adopt plans for their own benefit, rather than to benefit the neighbourhood, they must have a return. It is a prevailing opinion, that there is no economy in the plans recommended, yet the combustion of the coal gas, when effected by a judicious admission of atmospheric air, cannot fail of being economical. There are many modes of getting rid of smoke; a prevailing one is the placing the coal in front; a slow distillation then takes place, and the coal gas passes over a space of red-hot fuel from two to three feet long. That cannot be economical; it is based on a wrong principle. It is a false principle, as Dr. Ure says; but, where there is an entire combustion of the gas, by giving it air, there must be a saving. But air may be given injudiciously, in two large bodies; laying the fuel in front of the furnace is one plan by which there would not be heavy black smoke, but that is no proof of economy—that is one great cause of the fallacy. The plan of introducing steam into the furnace the witness had seen. It was at first supposed that a decomposition of the steam took place, and that its hydrogen and oxygen became available. They may do so slightly, but, if there be any value in the plan, it is, that it creates a current or blast in the furnace. The jet of steam passing into a furnace forced the air, which would not otherwise have passed so freely. If smoke be once produced by imperfect combustion, it will take fuel to get rid of it; in the manner described, by a jet of steam, it will never be attended with economy. The prevention of smoke by complete combustion is attended with economy, for then smoke is never formed. The reason that coal gas has a colour when first evolved from coal is owing to its impurities; it has a great body of coal-tar mixed with it; it is, in fact, though called smoke, but impure gas.—Q. Such smoke must be made before it comes in contact with the orifices? A. It is very easy to prove that it is all coal gas. It is as much coal gas in the furnace as if you took the lid from a gas retort in the gas works. The witness explained, that if too much air passes up through holes in the fuel on the bars smoke will be made.—Q. The system by which Mr. Williams proposes to consume the smoke is not one which requires an addition of fuel, is it? A. No.—Q. Does it not admit the air beyond the bridge, and, by a certain distribution of that air into the gases, consume those gases? A. The general impression is, that what you have in the furnace is smoke, but it is not so; it is gas, and it is that gas to which the jets of air are given. You get the combustion of the gas, and of course you get a higher temperature.—Q. Then, without an addition of fuel, you get a considerable increase of heat, and at the same time you get rid of the nuisance? A. You get an increase of heat and you get rid of the nuisance decidedly—that is the source of economy.—Q. Therefore, it is an erroneous impression to say that you get a furnace to burn its own smoke; it ought to be that you get a furnace to prevent the smoke, not to consume it; whereas, the common idea is that the smoke is to be generated, and by passing over the fire is to be consumed. That is an improper expression according to Dr. Ure and Mr. Williams. Is it to be understood that that is your opinion? A. Just so; you must consume the gas in its nascent state, and not let it get to a state of smoke.

The next witness examined was Dr. Reid, but as the abstract of his evidence is not complete, we postpone notice of it till next week.

Extensive alterations are being carried into effect at the General Post Office, Aldersgate-street, in consequence of the great increase of business in the money-order department, on which account two large rooms are in course of erection.